REMARKS/ARGUMENTS

Reconsideration of this application is requested. Claims 1-3, 7, 8, 10-16 and 22-23 are in the case.

I. CLAIM OBJECTIONS

Claim 23 has been objected to as depending from a cancelled claim. In response, claim 23 has been amended so as to be dependent on claim 22. Withdrawal of this claim objection is now respectfully requested.

II. THE 35 U.S.C. §112, FIRST PARAGRAPH, REJECTION

Claims 4-6 and 17-20 stand rejected under 35 U.S.C. §112, first paragraph, as allegedly failing to comply with the written description requirement. In response, and without conceding to the merit of this rejection, claim 4-6 and 17-21 have been cancelled without prejudice. Withdrawal of this rejection is now respectfully requested.

III. THE ANTICIPATION REJECTION

Claim 24 stands rejected under 35 U.S.C. §102(e) as allegedly anticipated by U.S. Patent 5,956,165 to Fee et al. In response, and without conceding to the merit of this rejection, claim 24 has been cancelled without prejudice. Withdrawal of the anticipation rejection is now respectfully requested.

IV. THE OBVIOUSNESS REJECTIONS

Claims 1-3, 10-16, 22 and 23 stand rejected under 35 U.S.C. §103(a) as allegedly unpatentable over U.S. 5,956,165 to Fee in view of Kazovsky et al. Claims 7 and 8 stand rejected under 35 U.S.C. §103(a) as allegedly unpatentable over Fee in view of Kazovsky and further in view of U.S. Patent Application Publication No. 2004/0190911 to Franco et al. Those rejections are respectfully traversed.

The invention as claimed is directed to a method of encoding control information on an optical data signal to be transmitted through an optical network. The method comprises operating an optical source to generate a substantially coherent continuous-wave light beam, amplitude-modulating the light beam with a data stream to produce an optical data signal, and also modulating the data signal with control information, using a substantially constant amplitude modulation technique.

Fee does not suggest the claimed invention. For example, the subcarrier information in Fee is processed in a completely different way from that of the present invention. The drop/insert facility (column 2, line 43 to line 56) inverts the subcarrier signal and sends this to an optical amplifier through which the complete signal passes. This has the effect of removing the original subcarrier signal. An updated subcarrier signal is superimposed upon the modulated optical data signal at the same time.

Moreover, the subcarrier information in Fee is modulated onto the carrier in a completely different way from that of the present invention. The subcarrier signal in Fee is clearly an amplitude modulated signal because the payload signal and the subcarrier signal are combined in the electrical domain and modulated together onto the optical signal (column 7, lines 63 and 64). There is no suggestion in Fee of using a different

modulation technique – indeed, it would significantly increase the complexity of the modulation applied if this was done.

The person of ordinary skill would have had no incentive to seek a different add/drop technique for the subcarrier since a perfectly functional technique is disclosed in Fee that performs both functions at the same time and there is no suggestion that it is inadequate in any way. One of ordinary skill would not therefore have been motivated to seek an alternative subcarrier transmission technique on the basis of Fee.

Kazovsky fails to cure the above-noted deficiencies of Fee. Kazovsky is concerned with providing both circuit switched and packet switched networks in the same passive star topology (see, for example, page 1009, right hand column, second full paragraph, final sentence and page 1010, left hand column, lines 5 to 7). This is a completely different problem from that addressed in Fee. Even if the person of ordinary skill was aware of Kazovsky, there would have been no reason to combine it with Fee. Kazovsky discloses that it is possible to carry amplitude modulated traffic and non-amplitude modulated traffic in the same physical channel. The data stream modulated using ASK and the data stream modulated using PSK are entirely separate – there is no suggestion of a link between the two. The person of ordinary skill thus has no guidance to use the differently modulated signals in Kazovsky as a payload signal and a subcarrier signal. Moreover, even if one of ordinary skill were to make this step, in Kazovsky, the data modulated using ASK is the low data rate signal and the data modulated using modulation that does not rely upon transmission power variations is the high data rate signal. In the present invention, on the other hand, the payload will always be a high data rate signal and the subcarrier will be a low data rate signal.

Consequently, the combination of Fee and Kazovsky, even if it were to be contemplated, would result in an arrangement in which the payload were extracted by application to an SOA and the subcarrier signal would survive the wavelength translation. Withdrawal of this obviousness rejection is respectfully requested.

Referring to the obviousness rejection of claims 7 and 8, each of those claims is dependent on claim 1 and thereby incorporates all of the features of claim 1 which are novel and non-obvious over Fee and Kazovsky for the above-discussed reasons. Franco does not add anything to the disclosures which would in any way suggest the subject matter of claims 7 and 8. Withdrawal of the obviousness rejection of claims 7 and 8 is accordingly respectfully requested.

V. SPECIFICATION

An abstract is presented on a separate sheet attached to this response. The abstract is based on claim 1. No new matter is entered. Entry of the abstract is accordingly respectfully requested.

Favorable action on this application is awaited.

Respectfully submitted,

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DISCLOSURE OF THE ABSTRACT

Method of encoding control information on an optical data signal to be transmitted through an optical network. An optical source is operated to generate a substantially coherent continuous-wave light beam, the light beam is amplitude-modulated with a data stream to produce an optical data signal, and the data signal is also modulated with control information, using a substantially constant amplitude modulation technique.